0270

OIPE

RAW SEQUENCE LISTING   DATE: 10/20/2000
PATENT APPLICATION: US/09/686,346   TIME: 10:57:18

Input Set: A:\421C1.App
Output Set: N:\CRF3\10202000\I686346.raw

```
    4 <110> APPLICANT: Cobb, Melanie
    5         Hutchison, Michele
    6         Chen, Zhu
    7         Berman, Kevin
    9 <120> TITLE OF INVENTION: TAO PROTEIN KINASE POLYPEPTIDES AND
   10         METHODS OF USE THEREFOR
   12 <130> FILE REFERENCE: 860098.421C1
C-->14 <140> CURRENT APPLICATION NUMBER: US/09/686,346
C-->14 <141> CURRENT FILING DATE: 2000-10-10
   14 <150> PRIOR APPLICATION NUMBER: 09/060,410
   15 <151> PRIOR FILING DATE: 1998-04-14
   17 <160> NUMBER OF SEQ ID NOS: 28
   19 <170> SOFTWARE: FastSEQ for Windows Version 4.0
   21 <210> SEQ ID NO: 1
   22 <211> LENGTH: 3312
   23 <212> TYPE: DNA
   24 <213> ORGANISM: Rattus norvegicus
   26 <220> FEATURE:
   27 <221> NAME/KEY: CDS
   28 <222> LOCATION: (121)...(3123)
   30 <400> SEQUENCE: 1
   31 tctgcagtat ggtagattat tatttatgca tttatgccag tgtggcttca ttcatacaga      60
   32 tgaaccaagc tttgggatag cagtataaaa ttagaatcag acagctgact gctcagcagg     120
   33 atg cca tca act aac aga gca ggc agt cta aag gac cct gaa atc gca       168
   34 Met Pro Ser Thr Asn Arg Ala Gly Ser Leu Lys Asp Pro Glu Ile Ala
   35 1               5                   10                  15
   37 gag ctc ttc ttc aaa gaa gat ccg gaa aaa ctc ttc aca gat ctc aga       216
   38 Glu Leu Phe Phe Lys Glu Asp Pro Glu Lys Leu Phe Thr Asp Leu Arg
   39             20                  25                  30
   41 gaa atc ggc cat ggg agc ttt gga gca gtt tat ttt gca cga gat gtg       264
   42 Glu Ile Gly His Gly Ser Phe Gly Ala Val Tyr Phe Ala Arg Asp Val
   43         35                  40                  45
   45 cgt act aat gaa gtg gtg gcc atc aag aaa atg tct tat agt gga aag       312
   46 Arg Thr Asn Glu Val Val Ala Ile Lys Lys Met Ser Tyr Ser Gly Lys
   47     50                  55                  60
   49 cag tct act gag aaa tgg cag gat att att aag gaa gtc aag ttt cta       360
   50 Gln Ser Thr Glu Lys Trp Gln Asp Ile Ile Lys Glu Val Lys Phe Leu
   51 65                  70                  75                  80
   53 caa aga ata aaa cat ccc aac agt ata gaa tac aaa ggc tgc tat tta       408
   54 Gln Arg Ile Lys His Pro Asn Ser Ile Glu Tyr Lys Gly Cys Tyr Leu
   55                 85                  90                  95
   57 cgt gaa cac aca gca tgg ctt gta atg gaa tat tgt tta gga tct gct       456
   58 Arg Glu His Thr Ala Trp Leu Val Met Glu Tyr Cys Leu Gly Ser Ala
   59                 100                 105                 110
   61 tcg gat tta cta gaa gtt cat aaa aag cca tta caa gaa gtg gaa ata       504
   62 Ser Asp Leu Leu Glu Val His Lys Lys Pro Leu Gln Glu Val Glu Ile
   63         115                 120                 125
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 65 gca gca att aca cat ggt gct ctc cag gga tta gct tat tta cat tct        552
 66 Ala Ala Ile Thr His Gly Ala Leu Gln Gly Leu Ala Tyr Leu His Ser
 67     130                 135                 140
 69 cat acc atg atc cat aga gat atc aaa gca gga aat atc ctt ctg aca        600
 70 His Thr Met Ile His Arg Asp Ile Lys Ala Gly Asn Ile Leu Leu Thr
 71 145                 150                 155                 160
 73 gaa cca ggc caa gtg aaa ctt gct gac ttt gga tct gct tcc atg gcc       648
 74 Glu Pro Gly Gln Val Lys Leu Ala Asp Phe Gly Ser Ala Ser Met Ala
 75                 165                 170                 175
 77 tcc cct gcc aat tct ttt gtg gga aca cca tat tgg atg gcc cca gaa       696
 78 Ser Pro Ala Asn Ser Phe Val Gly Thr Pro Tyr Trp Met Ala Pro Glu
 79         .       180                 185                 190
 81 gta att tta gcc atg gat gaa gga caa tat gat ggc aaa gtt gat gta       744
 82 Val Ile Leu Ala Met Asp Glu Gly Gln Tyr Asp Gly Lys Val Asp Val
 83             195                 200                 205
 85 tgg tct ctt gga ata aca tgt att gaa tta gcc gag agg aag cct cct       792
 86 Trp Ser Leu Gly Ile Thr Cys Ile Glu Leu Ala Glu Arg Lys Pro Pro
 87     210                 215                 220
 89 tta ttt aat atg aat gca atg agt gcc tta tat cac ata gcc caa aat       840
 90 Leu Phe Asn Met Asn Ala Met Ser Ala Leu Tyr His Ile Ala Gln Asn
 91 225                 230                 235                 240
 93 gaa tcc cct aca cta cag tct aat gaa tgg tct gat tat ttt cga aac       888
 94 Glu Ser Pro Thr Leu Gln Ser Asn Glu Trp Ser Asp Tyr Phe Arg Asn
 95                 245                 250                 255
 97 ttt gta gat tct tgc ctc cag aaa atc cct caa gat cgc cct aca tca       936
 98 Phe Val Asp Ser Cys Leu Gln Lys Ile Pro Gln Asp Arg Pro Thr Ser
 99             260                 265                 270
101 gag gaa ctt tta aag cac atg ttt gtt ctt cga gag cgc cct gaa aca       984
102 Glu Glu Leu Leu Lys His Met Phe Val Leu Arg Glu Arg Pro Glu Thr
103         275                 280                 285
105 gtg tta ata gat ctt att caa agg aca aag gat gca gta aga gag ctg      1032
106 Val Leu Ile Asp Leu Ile Gln Arg Thr Lys Asp Ala Val Arg Glu Leu
107     290                 295                 300
109 gac aat cta caa tat cga aag atg aag aaa ctc ctt ttc cag gag gca      1080
110 Asp Asn Leu Gln Tyr Arg Lys Met Lys Lys Leu Leu Phe Gln Glu Ala
111 305                 310                 315                 320
113 cat aat gga cca gca gta gaa gca cag gaa gaa gag gag gag caa gat      1128
114 His Asn Gly Pro Ala Val Glu Ala Gln Glu Glu Glu Glu Glu Gln Asp
115                 325                 330                 335
117 cat ggt ggt ggc cgg aca gga aca gta aat agt gtt gga agc aat cag      1176
118 His Gly Gly Gly Arg Thr Gly Thr Val Asn Ser Val Gly Ser Asn Gln
119         .       340                 345                 350
121 tct atc ccc agt atg tct atc agt gcc agt agc caa agc agc agt gtt      1224
122 Ser Ile Pro Ser Met Ser Ile Ser Ala Ser Ser Gln Ser Ser Ser Val
123         355                 360                 365
125 aat agt ctt cca gat gca tcg gat gac aag agt gag cta gac atg atg      1272
126 Asn Ser Leu Pro Asp Ala Ser Asp Asp Lys Ser Glu Leu Asp Met Met
127     370                 375                 380
129 gag gga gac cat aca gtg atg tct aac agt tct gtc atc cac tta aaa      1320
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130 Glu Gly Asp His Thr Val Met Ser Asn Ser Ser Val Ile His Leu Lys
131 385                 390                 395                 400
133 cct gag gag gaa aat tac caa gaa gaa gga gat cct aga aca aga gca      1368
134 Pro Glu Glu Glu Asn Tyr Gln Glu Glu Gly Asp Pro Arg Thr Arg Ala
135                 405                 410                 415
137 tca gct cca cag tct cca cct caa gtg tct cgt cac aaa tca cat tat      1416
138 Ser Ala Pro Gln Ser Pro Pro Gln Val Ser Arg His Lys Ser His Tyr
139                 420                 425                 430
141 cgt aat aga gaa cac ttt gca act ata cga aca gca tca ctg gtt aca      1464
142 Arg Asn Arg Glu His Phe Ala Thr Ile Arg Thr Ala Ser Leu Val Thr
143             435                 440                 445
145 aga cag atg caa gaa cat gag cag gac tct gaa ctt aga gaa cag atg      1512
146 Arg Gln Met Gln Glu His Glu Gln Asp Ser Glu Leu Arg Glu Gln Met
147         450                 455                 460
149 tct ggt tat aag cgg atg agg cga cag cat cag aag cag ctg atg act      1560
150 Ser Gly Tyr Lys Arg Met Arg Arg Gln His Gln Lys Gln Leu Met Thr
151 465                 470                 475                 480
153 ctg gaa aat aaa ctg aag gca gaa atg gac gaa cat cgg ctc aga tta      1608
154 Leu Glu Asn Lys Leu Lys Ala Glu Met Asp Glu His Arg Leu Arg Leu
155             485                 490                 495
157 gac aaa gat ctt gaa act cag cgc aac aat ttc gct gca gaa atg gag      1656
158 Asp Lys Asp Leu Glu Thr Gln Arg Asn Asn Phe Ala Ala Glu Met Glu
159             500                 505                 510
161 aaa ctt att aag aaa cac caa gct tct atg gaa aaa gag gct aaa gtg      1704
162 Lys Leu Ile Lys Lys His Gln Ala Ser Met Glu Lys Glu Ala Lys Val
163         515                 520                 525
165 atg gcc aac gag gag aaa aaa ttc caa caa cac att cag gct caa cag      1752
166 Met Ala Asn Glu Glu Lys Lys Phe Gln Gln His Ile Gln Ala Gln Gln
167         530                 535                 540
169 aag aaa gaa ctg aat agc ttt ttg gag tct caa aaa aga gaa tat aaa      1800
170 Lys Lys Glu Leu Asn Ser Phe Leu Glu Ser Gln Lys Arg Glu Tyr Lys
171 545                 550                 555                 560
173 ctt cga aaa gag cag ctt aag gag gag ctg aat gaa aac cag agc aca      1848
174 Leu Arg Lys Glu Gln Leu Lys Glu Glu Leu Asn Glu Asn Gln Ser Thr
175             565                 570                 575
177 cct aaa aaa gaa aag cag gaa tgg ctt tca aag cag aag gag aat att      1896
178 Pro Lys Lys Glu Lys Gln Glu Trp Leu Ser Lys Gln Lys Glu Asn Ile
179             580                 585                 590
181 caa cat ttt cag gca gaa gaa gaa gct aat ctt ctt cga cgt caa agg      1944
182 Gln His Phe Gln Ala Glu Glu Glu Ala Asn Leu Leu Arg Arg Gln Arg
183         595                 600                 605
185 cag tat cta gag cta gaa tgt cgt cgc ttc aaa aga aga atg tta ctt      1992
186 Gln Tyr Leu Glu Leu Glu Cys Arg Arg Phe Lys Arg Arg Met Leu Leu
187         610                 615                 620
189 ggt cgg cat aac ttg gaa cag gac ctt gtc agg gag gag tta aac aaa      2040
190 Gly Arg His Asn Leu Glu Gln Asp Leu Val Arg Glu Glu Leu Asn Lys
191 625                 630                 635                 640
193 agg cag act cag aag gac tta gaa cat gca atg tta ctg cga cag cat      2088
194 Arg Gln Thr Gln Lys Asp Leu Glu His Ala Met Leu Leu Arg Gln His
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195                 645                650                655
197 gaa tcc atg caa gaa ctg gag ttt cgc cac ctc aac act att cag aag    2136
198 Glu Ser Met Gln Glu Leu Glu Phe Arg His Leu Asn Thr Ile Gln Lys
199                 660                665                670
201 atg cgc tgt gag ttg atc aga ctg caa cat caa act gag ctt act aac    2184
202 Met Arg Cys Glu Leu Ile Arg Leu Gln His Gln Thr Glu Leu Thr Asn
203                 675                680                685
205 cag ctg gaa tac aat aag aga agg gaa cgg gaa cta aga cgg aaa cat    2232
206 Gln Leu Glu Tyr Asn Lys Arg Arg Glu Arg Glu Leu Arg Arg Lys His
207        690                695                700
209 gtc atg gaa gtt cga cag cag cct aag agt ttg aag tct aaa gaa ctc    2280
210 Val Met Glu Val Arg Gln Gln Pro Lys Ser Leu Lys Ser Lys Glu Leu
211 705                710                715                720
213 caa ata aaa aag cag ttt cag gat acc tgc aaa att caa acc aga cag    2328
214 Gln Ile Lys Lys Gln Phe Gln Asp Thr Cys Lys Ile Gln Thr Arg Gln
215                 725                730                735
217 tac aaa gca tta agg aat cac cta ctg gag act aca cca aag agt gag    2376
218 Tyr Lys Ala Leu Arg Asn His Leu Leu Glu Thr Thr Pro Lys Ser Glu
219                 740                745                750
221 cac aaa gct gtt ctg aaa aga ctc aag gag gaa cag act cgg aag tta    2424
222 His Lys Ala Val Leu Lys Arg Leu Lys Glu Glu Gln Thr Arg Lys Leu
223        755                760                765
225 gcc atc ttg gct gag cag tat gat cat agc att aat gaa atg ctc tcc    2472
226 Ala Ile Leu Ala Glu Gln Tyr Asp His Ser Ile Asn Glu Met Leu Ser
227        770                775                780
229 aca caa gct ctg cgt ttg gat gaa gca cag gaa gca gaa tgc cag gtt    2520
230 Thr Gln Ala Leu Arg Leu Asp Glu Ala Gln Glu Ala Glu Cys Gln Val
231 785                790                795                800
233 ttg aag atg cag cta cag cag gaa ctg gag ctg ttg aat gca tat cag    2568
234 Leu Lys Met Gln Leu Gln Gln Glu Leu Glu Leu Leu Asn Ala Tyr Gln
235                 805                810                815
237 agc aaa atc aag atg cag gct gag gcc caa cat gat cga gag ctt cga    2616
238 Ser Lys Ile Lys Met Gln Ala Glu Ala Gln His Asp Arg Glu Leu Arg
239                 820                825                830
241 gag ctg gaa caa agg gtc tcc ctt cgg aga gca ctc tta gaa cag aag    2664
242 Glu Leu Glu Gln Arg Val Ser Leu Arg Arg Ala Leu Leu Glu Gln Lys
243        835                840                845
245 att gaa gaa gag atg ttg gct ttg cag aat gaa cgc aca gaa cga ata    2712
246 Ile Glu Glu Glu Met Leu Ala Leu Gln Asn Glu Arg Thr Glu Arg Ile
247        850                855                860
249 cgt agc ctg ctc gag cgc cag gcc aga gaa att gaa gct ttt gac tct    2760
250 Arg Ser Leu Leu Glu Arg Gln Ala Arg Glu Ile Glu Ala Phe Asp Ser
251 865                870                875                880
253 gaa agc atg aga tta ggt ttt agt aac atg gtc ctt tct aat ctc tcc    2808
254 Glu Ser Met Arg Leu Gly Phe Ser Asn Met Val Leu Ser Asn Leu Ser
255                 885                890                895
257 cct gag gca ttc agc cac agc tac cca gga gct tct agc tgg tct cac    2856
258 Pro Glu Ala Phe Ser His Ser Tyr Pro Gly Ala Ser Ser Trp Ser His
259                 900                905                910
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RAW SEQUENCE LISTING                    DATE: 10/20/2000
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Input Set : A:\421C1.App
Output Set: N:\CRF3\10202000\I686346.raw

261 aat cct act ggg ggt tca gga cct cac tgg ggt cat ccc atg ggt ggc    2904
262 Asn Pro Thr Gly Gly Ser Gly Pro His Trp Gly His Pro Met Gly Gly
263           915                 920                 925
265 aca cca caa gct tgg ggt cat ccg atg caa ggc gga ccc caa cca tgg    2952
266 Thr Pro Gln Ala Trp Gly His Pro Met Gln Gly Gly Pro Gln Pro Trp
267           930                 935                 940
269 ggt cac ccc tca ggg cca atg caa ggg gta cct cga ggt agc agt ata    3000
270 Gly His Pro Ser Gly Pro Met Gln Gly Val Pro Arg Gly Ser Ser Ile
271 945               950                 955                 960
273 gga gtc cgc aat agc ccc cag gct ctg agg cgg aca gct tct ggg gga    3048
274 Gly Val Arg Asn Ser Pro Gln Ala Leu Arg Arg Thr Ala Ser Gly Gly
275               965                 970                 975
277 cgg acg gaa cag ggc atg agc aga agc acg agt gtc act tca caa ata    3096
278 Arg Thr Glu Gln Gly Met Ser Arg Ser Thr Ser Val Thr Ser Gln Ile
279           980                 985                 990
281 tcc aat ggg tca cac atg tct tac aca taataattga aagtggcaat          3143
282 Ser Asn Gly Ser His Met Ser Tyr Thr
283           995                 1000
285 tccgctggag ctgtctgcca aaagaaactg cctacagaca tcagcacagc agcctcctca  3203
286 cttgggtact accgggtgga agctgtgcat atggtatatt ttattcgtct ttgtaaagcg  3263
287 ttatgttttg tgtttactaa ttgggatgtc atagtatttg gctgccggg             3312
289 <210> SEQ ID NO: 2
290 <211> LENGTH: 1001
291 <212> TYPE: PRT
292 <213> ORGANISM: Rattus norvegicus
294 <400> SEQUENCE: 2
295 Met Pro Ser Thr Asn Arg Ala Gly Ser Leu Lys Asp Pro Glu Ile Ala
296 1                 5                 10                  15
297 Glu Leu Phe Phe Lys Glu Asp Pro Glu Lys Leu Phe Thr Asp Leu Arg
298           20                  25                  30
299 Glu Ile Gly His Gly Ser Phe Gly Ala Val Tyr Phe Ala Arg Asp Val
300           35                  40                  45
301 Arg Thr Asn Glu Val Val Ala Ile Lys Lys Met Ser Tyr Ser Gly Lys
302       50                  55                  60
303 Gln Ser Thr Glu Lys Trp Gln Asp Ile Ile Lys Glu Val Lys Phe Leu
304 65                  70                  75                  80
305 Gln Arg Ile Lys His Pro Asn Ser Ile Glu Tyr Lys Gly Cys Tyr Leu
306               85                  90                  95
307 Arg Glu His Thr Ala Trp Leu Val Met Glu Tyr Cys Leu Gly Ser Ala
308           100                 105                 110
309 Ser Asp Leu Leu Glu Val His Lys Lys Pro Leu Gln Glu Val Glu Ile
310           115                 120                 125
311 Ala Ala Ile Thr His Gly Ala Leu Gln Gly Leu Ala Tyr Leu His Ser
312       130                 135                 140
313 His Thr Met Ile His Arg Asp Ile Lys Ala Gly Asn Ile Leu Leu Thr
314 145                 150                 155                 160
315 Glu Pro Gly Gln Val Lys Leu Ala Asp Phe Gly Ser Ala Ser Met Ala
316               165                 170                 175
317 Ser Pro Ala Asn Ser Phe Val Gly Thr Pro Tyr Trp Met Ala Pro Glu
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Please Note:

Use of n and/or Xaa have been detected in the Sequence Listing. Please review the Sequence Listing to ensure that a corresponding explanation is presented in the <220> to <223> fields of each sequence which presents at least one n or Xaa.

VERIFICATION SUMMARY   DATE: 10/20/2000
PATENT APPLICATION: US/09/686,346   TIME: 10:57:19

Input Set : A:\421C1.App
Output Set: N:\CRF3\10202000\I686346.raw

L:14 M:270 C: Current Application Number differs, Replaced Current Application No
L:14 M:271 C: Current Filing Date differs, Replaced Current Filing Date
L:929 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:5
L:930 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:5
L:931 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:5
L:964 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:7
L:1003 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:10
L:1016 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:11
L:1163 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:19
L:1178 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:20
L:1193 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:21
L:1208 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:22